AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for estimating from an input signal the resonance frequencies of a system modelled as a source and a filter, the method comprising:

determining the Z-transform of ~~said~~ an input signal;

calculating the differential-phase spectrum of said Z-transformed input signal, said Z-transform thereby being evaluated on a circle centered around the origin of the Z-plane;

detecting the peaks on said differential-phase spectrum;

attributing said peaks to either ~~said~~ a source or ~~said~~ a filter; and

estimating said resonance frequencies from said peaks.

2. (Previously presented) The method for estimating the resonance frequencies as in claim 1, wherein said circle is different from the unit circle in the Z-plane.

3. (Previously presented) The method for estimating the resonance frequencies as in claim 1, wherein said Z-transform of said input signal is evaluated on more than one circle.

4. (Previously presented) The method for estimating the resonance frequencies as in claim 1, wherein said input signal is windowed.

5. (Previously presented) The method for estimating the resonance frequencies as in claim 1, wherein said input signal is a speech signal.

6. (Previously presented) The method for estimating the resonance frequencies as in claim 1, wherein said source is a glottal flow signal.

7. (Previously presented) The method for estimating the resonance frequencies as in claim 1, wherein said filter is a vocal tract system.

8. (Previously presented) The method for estimating the resonance frequencies as in claim 1, wherein attributing said peaks is performed based on the sign of said peaks.

9. (Previously presented) The method for estimating the resonance frequencies as in claim 8, wherein attributing is further based on the radius of said circle.

10. (Previously presented) The method for estimating the resonance frequencies as in claim 1, further comprising removing zeros of said input signal's Z-transform before performing calculating said differential-phase spectrum.

11. (Currently amended) A computer usable medium having computer readable program code embodied therein for estimating from an input signal the resonance frequencies of a system modeled as a source and a filter, the computer readable code comprising instructions for:

determining the Z-transform of ~~said~~ an input signal;

calculating the differential-phase spectrum of said Z-transformed input signal, said Z-transform thereby being evaluated on a circle centered around the origin of the Z-plane;

detecting the peaks on said differential-phase spectrum;

attributing said peaks to either ~~said~~ a source or ~~said~~ a filter; and

estimating said resonance frequencies from said peaks.